



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,150	06/22/2006	Etsuo Fujimoto	Q95225	7002
23373	7590	04/21/2009	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			ENG, ELIZABETH	
ART UNIT	PAPER NUMBER		4151	
MAIL DATE	DELIVERY MODE			
04/21/2009	PAPER			

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/584,150	<b>Applicant(s)</b> FUJIMOTO ET AL.
	<b>Examiner</b> ELIZABETH ENG	<b>Art Unit</b> 4151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-24 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_ is/are allowed.  
 6) Claim(s) 1-24 is/are rejected.  
 7) Claim(s) \_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 1/30/07, 6/22/06.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

## Detailed Action

### 35 USC 102 Claim Rejections

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsumoto et al. (EP1081717).
3. Regarding claims 1, Matsumoto et al. teaches a granular polysaccharide polymer comprising a phthalocyanine skeleton [0015, column 4, line 12] bonded [0019] to a granular porous polysaccharide polymer [porous spherical particles, 0020, line 52].
4. Regarding claim 2, Matsumoto et al. teaches the polysaccharide is Cellufine A-200 [Example 1, 0035], wherein the particle diameter of the granular polysaccharide polymer provided by the operating instructions of Chisso America Inc. is 44-105 $\mu$ m, which reads in the claimed range of 1 $\mu$ m to 2mm.
5. Regarding claim 3, Matsumoto et al. teaches the granular polysaccharide polymer is crosslinked, wherein epichlorohydrin is a crosslinking agent used to crosslink CPC, porous cellulose spherical particles [0049, line 3].
6. Regarding claim 4, Matsumoto et al. teaches said granular polysaccharide polymer is a granular porous chitosan [0020, line 54].

7. Claims 1, and 6-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Hayatsu et al. (US Pat. No. 4460475).
8. Regarding claim 1, Hayatsu et al. teaches a granular polysaccharide polymer comprising a phthalocyanine skeleton bonded to a granular porous polysaccharide polymer [cellulose powder with phthalocyanine derivative, abstract]].
9. Regarding claim 6, Hayatsu et al. teaches the amount of the bound phthalocyanine skeleton is  $1.0 \times 10^{-5}$  mol per g of cotton [column 5, lines 62-63].
10. Regarding claim 7, Hayatsu et al. teaches the phthalocyanine skeleton and the granular polysaccharide polymer [cellulose powder, abstract] are bonded to each other through a covalent bond [column 3, line 28].
11. Regarding claims 8, Hayatsu et al. teaches the phthalocyanine skeleton and the granular polysaccharide polymer are bonded to each other through a covalent bond utilizing a hydroxyl group and/or an amino group in the granular polysaccharide polymer [column 3, lines 24-28].
12. Regarding claim 9, Hayatsu et al. teaches the phthalocyanine skeleton and the granular polysaccharide polymer are bonded to each other through a covalent bond utilizing a hydroxyl group and/or an amino group in the granular polysaccharide polymer group [column 3, lines 24-28] reactive with the hydroxyl group and/or the amino group in a phthalocyanine reactive dye containing the reactive group, wherein the reactive group is  $-NHCH_2OH$  [column 3, line 3].
13. Regarding claims 10 and 13, Hayatsu et al. teaches said reactive group in the phthalocyanine reactive dye is at least one reactive group selected from

dihalogenotriazines, monohalogenotriazines, trihalogenopyrimidines, sulfatoethylsulfones, dihalogenoquinoxalines, dihalogenopyridazinones, dihalophthalazines, sulfatoethylsulfone amides, mono- or dihalogenopyrimidines, acrylamide, vinylsulfone, dihalogenobenzothiazoles, methylolamine [columns 1 and 2].

14. Regarding claim 11, Hayatsu et al. teaches said reactive group is in a phthalocyanine reactive dye[abstract, last line] bonded to a phthalocyanine nucleus through a divalent group [X represents a bivalent group, column 3, line 60].
15. Regarding claim 12, Hayatsu et al. teaches the hydroxyl group and/or the amino group in the granular polysaccharide polymer are reacted with the reactive group in the phthalocyanine reactive dye [column 3, lines 24 to 28].
16. Regarding claim 14, Hayatsu et al. teaches for use in the separation of a polycyclic organic material [column 4, lines 41-42] by passing a solution of the material through a column filled with phthalocyanine adsorbent [column 4, line 17-21].
17. Regarding claims 15 and 16, Hayatsu et al. teaches a compound-separating tool characterized by comprising a granular polysaccharide polymer having a phthalocyanine skeleton bonded thereto, wherein the compound-separating tool is a column [column 4, lines 41-42].
18. Regarding claim 17, Hayatsu et al. teaches said compound-separating tool is used in separation of a polycyclic organic material [column 4, lines 17-21].

19. Regarding claims 18, 21, and 24, Hayatsu et al. teaches said polycyclic organic material is at least three compounds selected from aromatic or heterocyclic compounds having two or more rings [column 4, lines 41-42].
20. Regarding claims 19 and 22, Hayatsu et al. teaches a method for concentrating a polycyclic organic material, comprising adsorbing a polycyclic organic material on a granular polysaccharide polymer having a phthalocyanine skeleton bonded thereto and then desorbing the adsorbed polycyclic organic material [column 4, lines 43-54].
21. Regarding claims 20 and 23, Hayatsu et al. teaches the method for concentrating a polycyclic organic material wherein, after the adsorption of the polycyclic organic material on the granular polysaccharide polymer having a phthalocyanine skeleton bonded thereto in a polycyclic organic material-containing gas [column 4, line 21] or liquid [water, column 4, line 66], the adsorbed polycyclic organic material is desorbed by elution with a solvent [column 4, lines 10-11].

### **35 USC 103 Claim Rejection**

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
22. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 4151

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
23. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto et al. in view of Kawamura et al. (US Pat. No. 4833237).
24. Regarding claim 5, Matsumoto et al. teaches a granular polysaccharide polymer having a phthalocyanine skeleton [0015, column 4, line 12] bonded thereto [porous spherical particles, 0020, line 52].
25. Matsumoto et al. does not teach the granular polysaccharide polymer has a BET surface area of not less than 10 m<sup>2</sup>/g. However, Kawamura et al. teaches granular porous chitosan with specific surface areas of 31.9 - 166.7 m<sup>2</sup>/g [Table 4-3, Table 5], measured by way of a BET method [column 4, line 60].
26. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have BET surface areas of 31.9 - 166.7 m<sup>2</sup>/g for the benefit of having sufficient adsorption of material while still effectively eluting. Furthermore, the BET would have been obvious since the concentration of the phthalocyanine responsible for chelation of mutagens in the prior art is the amount of phthalocyanine compound of the instant invention. Therefore the same absorption is expected.

**Conclusion**

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Eng whose telephone number is (571) 270-7743. The examiner can normally be reached on Mon-Thurs from 9:00 am 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Angela Ortiz can be reached at (571) 272-1206. The fax phone number for the organization where this application or proceeding is assigned is (571) 270-8743. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

E.E.

*/Angela Ortiz/*

*Supervisory Patent Examiner, Art Unit 4151*